SONY

Video Camera Recorder 8

CCD-F50

Operating Instructions

Before operating the unit, please read this manual thoroughly and retain it for future reference.

FILE COPY
Do not remove

Mode d'emploi

Avant de faire fonctionner cet appareil, lire attentivement ce mode d'emploi et le conserver à titre de référence ultérieure.

Manual de instrucciones

Antes de utilizar la unidad, lea cuidadosamente este manual, y consérvelo para futuras referencias.

Video 8 **Handycam**

© 1989 by Sony Corporation

English

The CCD-F50 is a compact video camera recorder combined with a tape recorder. You can record pictures you want and play them back on your television set or color monitor.

Make sure your supplements

The following units are packed with the CCD-F50 video camera recorder.

- Battery pack NP-55 (1)
- AC power adaptor AC-V30 (1)
- RFU adaptor RFU-89UCA (1)
- Lens cap (1)
- Antenna selector (1)
- Lithium battery CR2025 (1)

For details on these units, please read their instruction manuals.

How to Use This Manual

How the Manual is Organized

This manual consists of following four sections:

- Power Sources and Cassette Care
- Camera Operation
- VTR Operation
- General (Hints for Better Shooting, Specifications, Troubleshooting etc.)

If it is the first time for you to use a video camera recorder, you should read Power Sources (page 18), Easy Camera Recording with Automatic Adjustment (page 32) and Playback (page 82).

If you are used to a video camera recorder, you should read Hints for Better Shooting at the end of the volume.

How the Manual Works

The instructions are written in English, French and Spanish.

Please refer to the illustrations on the left side which correspond to the sentences by letter codes.

About cassette format

This unit uses 8 mm video format cassettes. It records in the SP mode (approximately 1.43 cm/second) and can play back in the SP mode and the LP mode (approximately 0.72 cm/second).

The quality of the playback picture in the LP mode, however, will not be as good as that in the SP mode.

- Television programs, films, video tapes and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the copyright laws.
- PCM recording/playback is not possible with this unit. The PCM sound recorded or after-recorded with another recorder cannot be played back with this unit.

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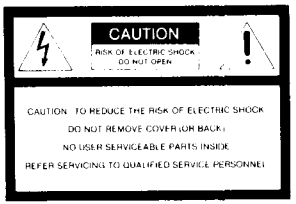
The model and serial numbers are located on the bottom. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. CCD-F50 Serial No.

To prevent fire or shock hazard, do not expose the unit to rain or moisture.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK
DO NOT REMOVE COVER (OR BACK)
NO USER SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance

INFORMATION

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna

Relocate the equipment with respect to the receiver

Move the equipment away from the receiver

Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

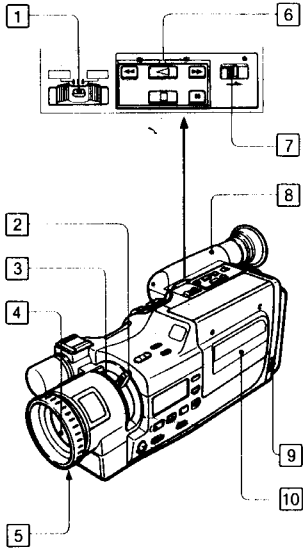
"How to Identify and Resolve Radio-TV Interference Problems".

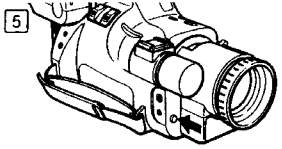
This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

NOTICE **For the customers in Canada**

This apparatus complies with the Class B limits for radio noise emissions set out in Radio Interference Regulations.

A-1





For details on the use of each control, refer to the pages indicated in the parenthesis:

A-1

1 **POWER switch**
CAMERA: For camera recording
VTR: For playing back or editing tapes
OFF: Power off

2 **Zoom lever** (page 66)

3 **Macro set button** (page 70)

4 **Focus ring** (page 52)

5 **START/STOP button** (page 34)
Used for low position recording.

6 **Tape transport buttons**
◀◀ FF (fast forward)
◁ (playback)
▶▶ REW (rewind)
□ (stop)
❚❚ (pause)

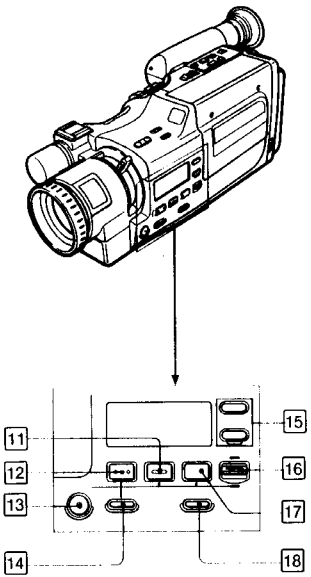
7 ● **REC (recording) switch**
Slide in the direction of the arrow for recording.

8 **Viewfinder**
The picture being recorded or played back can be monitored in monochrome here. Also, data such as caution indicators and function mode are displayed on the viewfinder screen.

9 **BATT (battery eject) knob** (page 22)

10 **Cassette holder**

A-2



A-2

11 **WHITE BAL** (white balance) button

12 **FOCUS button**
Used for manual focusing.

13 **BACK LIGHT button** (page 60)

14 **PUSH AUTO button** (page 54)

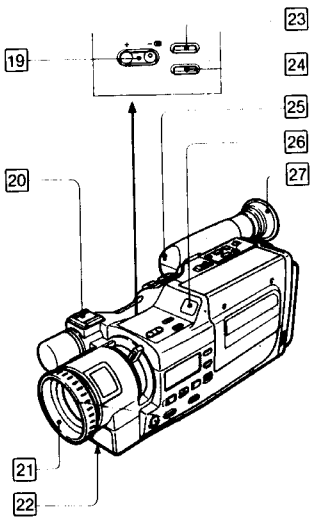
15 **DATE and TIME buttons**
Press to display or turn off the date or time.

16 **AUTO LOCK switch**
Normally set to the upper AUTO LOCK position (green position).

17 **SHUTTER SPEED button** (page 64)
Used to select the shutter speed.

18 **FADER button** (page 72)

A-3



A-3

19 **EDITSEARCH (⇆) button**

20 **Accessory shoe**
Attach an optional external microphone, video light, etc.

21 **Lens hood**

22 **Infrared beam emitter/detector**
Transmits an infrared beam toward the object to be shot during auto focusing. Do not look into it for a long time when recording with auto focusing. The infrared beam reflected from the object to be shot is received here during auto focusing.
Do not cover here.

23 **COUNTER RESET button**
Press to reset the counter to zero.

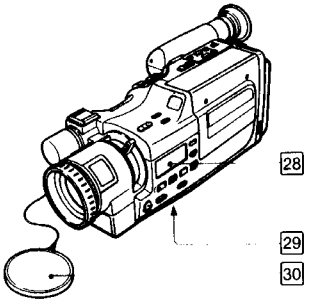
24 **ZERO MEM (zero memory) button**
Used to memorize the counter zero point.

25 **Camera recording/battery lamp**
Lights during camera recording. It blinks when the battery is exhausted.

26 **White balance sensor**
This is the sensor for auto white balance adjustment.
During recording, do not cover the sensor.

27 **Eyecup**

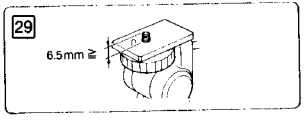
A-4



A-4

28 **Display window** (page 40)

A-5



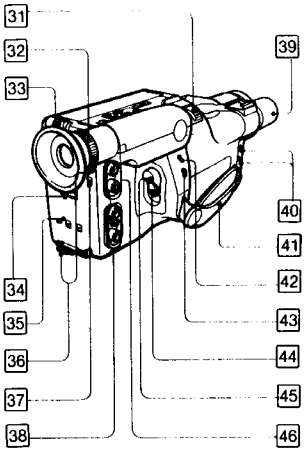
A-5

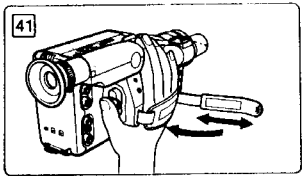
29 **Tripod receptacle**

Note when attaching a tripod not manufactured by Sony
When attaching a tripod not manufactured by Sony, the length of the camera mounting screw must be less than 6.5 mm.
Otherwise the screw may damage the inner parts of the camera.

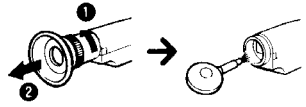
30 **Lens cap**

A-6





A-7



A-6

31 **Power zoom button** (page 66)

32 **Viewfinder lens adjustment ring** (page 30)
Adjust to your eyesight to assure good focus. Be sure to adjust this ring when shooting for the first time.

33 **EJECT (cassette eject) button** (page 28)

34 **Lithium battery compartment** (page 26)

35 **Battery mounting surface**

36 **Hooks for shoulder strap**
Attach a shoulder strap.

37 **EDIT switch** (page 102)
Normally set it to the upper position. When editing tapes, set to EDIT.

38 **VIDEO/AUDIO OUT (output) jacks (phono jacks)**
RFU DC OUT (RFU adaptor DC output) jack (special minijack)
Supplies power to the RFU-89UCA RFU adaptor.

39 **Built-in microphone (monaural)**

40 **MIC jack and DC OUT (microphone power output) jack**
Connect an external microphone.
The MIC jack accepts Sony "plug-in-power" microphones and supplies power to them.

41 **Grip strap**
Adjust the length so that your thumb can easily manipulate the START/STOP button.

42 **REMOTE connector (stereo mini-minijack)**

43 **(earphone) jack (minijack)**

44 **START/STOP button**
Press to start and stop camera recording.

45 **STANDBY switch**
Slide up to set the unit to recording pause mode.

46 **VIDEO/AUDIO IN (input) jacks (phono jacks)**

To remove dust from inside the viewfinder A-7
Detach the eyecup as illustrated and clean the surface of the Braun tube with a blower.

Selection of Power Sources

This manual shows the operations on one of the following power sources.

Place		Power source	Accessory to be used
Indoors		House current	AC power adaptor AC-V30 or AC-V55 (page 24)
Outdoors		Battery pack	Battery pack NP-55 or NP-77 (page 20) Battery case EBP-55 (page 22)
In the car		12 V or 24 V car battery	DC pack DCP-55 (page 24) (DCC-16B car battery cord supplied)

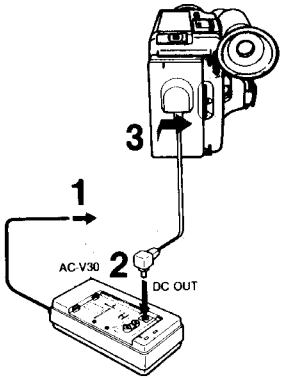
Notes on power source

- Disconnecting the power source or removing the battery pack during recording or playback may damage the inserted cassette tape. If this is done by accident, supply the power again immediately and turn on the power switch.
- Be careful not to let any metal object touched on the metal part on the battery pack or AC power adaptor. When the battery pack is not to be used, keep it in its case.

Optional Accessories for Charging

- **AC-V55 AC power adaptor**
  Two battery packs can be charged simultaneously.
- **BCA-70 or BCA-80 battery charge adaptor, ACP-88 AC pack and NPA-55 battery adaptor**
  For charging, insert an NP-55 into the NPA-55.

B-6



House Current — Using AC Power Adaptor B-6

1 **Connect the AC power adaptor to a wall outlet.**

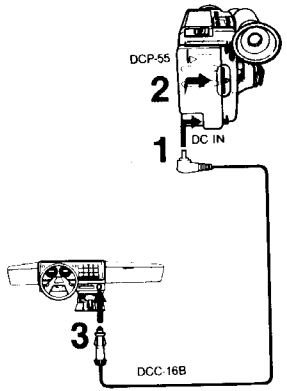
2 **Insert the connecting cord supplied with the AC-V30 AC power adaptor into the DC OUT jack on the AC power adaptor.**

3 **Align the right side of the connecting plate with the line on the recorder, and while pressing the connecting plate, slide it to the right.**

To remove the connecting plate for the AC power adaptor from the video camera recorder
While pressing the BATT knob on the recorder, slide and pull out the connecting plate.

The optional AC-V55 AC power adaptor can also be used to operate this recorder on house current.

B-7



Car Battery — Using the DC Pack B-7

1 **Insert the DCC-16B car battery cord supplied with the DCP-55 DC pack into the DC IN jack on the DC pack.**

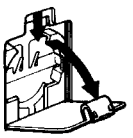
2 **Align the right side of the DC pack with the line on the recorder, and while pressing the DC pack, slide it to the right.**

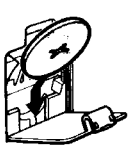
3 **Connect the DCC-16B car battery cord to the cigarette lighter socket of a car (12 V or 24 V).**

To remove the DC pack from the video camera recorder
While pressing the BATT knob on the recorder, slide and pull out the DC pack.

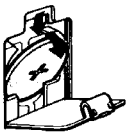
The optional AC-V55 AC power adaptor and the DCC-16AW car battery cord can also be used to operate this recorder on a 12V or 24V car battery.

C-1





C-2



Lithium Battery C-1

Insert the lithium battery
This unit uses a lithium battery to activate the clock. Before operating the unit for the first time, install the supplied lithium battery:

1 **Open the cover of the lithium battery compartment on the battery mounting surface.**

2 **Install the supplied CR2025 lithium battery with the ⊕ side facing out.**

3 **Close the cover.**

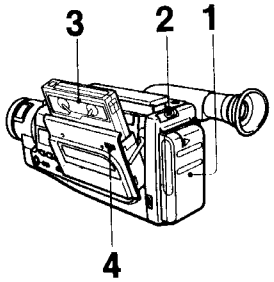
To remove the lithium battery C-2
Press the side of the battery in the direction as indicated for installation.

Lithium battery life
Approximately 1 year in normal operation.
When the lithium battery becomes weak, the time indication will blink on the viewfinder screen for about 5 seconds. In this case, replace the battery with a Sony CR2025 or Duracell DL-2025 lithium battery. Use of another battery may present a risk of fire or explosion.

Notes on lithium battery
- Keep the lithium battery out of the reach of children. Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.
- Even when the lithium battery is installed, the display window will not light unless power is supplied to the unit.

WARNING
Battery may explode if mistreated.
Do not recharge, disassemble or dispose of in fire.

D-1



Cassette Insertion D-1

1 **Connect a power source.**

2 **Pressing the small button, slide the EJECT button in the arrow direction.**
The cassette holder will open.

3 **Insert a cassette with the window facing outside.**

4 **Press the PUSH mark to close the cassette holder.**

Cassette Ejection D-1

1 **Make sure that a power source is connected.**

2 **Pressing the small button, slide the EJECT button in the arrow direction.**
The cassette holder will open.

3 **Take out the cassette.**

4 **Press the PUSH mark to close the cassette holder.**

D-2

To Prevent Accidental Erasure D-2

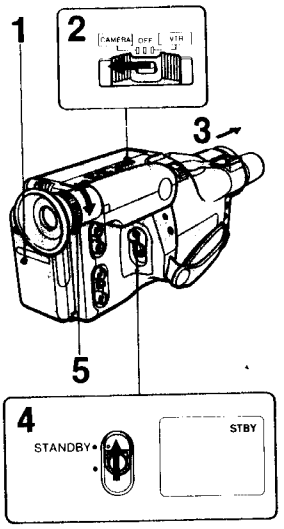
Slide out the tab on the cassette so that it covers the opening. (A red mark will appear.)

To re-record on the cassette, slide the tab in to uncover the opening.

Notes

- Don't press the upper lid of the cassette compartment forcibly when it is moving.
  When the cassette holder is pressed to close, the upper lid of the cassette compartment will automatically lower.
- Never insert anything in the small holes on the rear of the cassette. These holes are used to sense the kind of tape, thickness of tape, or if the tab is out or in, etc.
- To record from the beginning of the tape, run the video camera recorder for about 15 seconds at the beginning of a cassette before recording. It will avoid missing the starting point during playback on a video cassette recorder.

E



Camera Operation

Adjustment of the Position of Viewfinder Lens

The position of the viewfinder lens for optimum vision varies depending on the user. E

1 **Connect a power source.**

2 **While pressing the small button, set the POWER switch to CAMERA.**

3 **Remove the lens cap.**

4 **Slide the STANDBY switch up.**

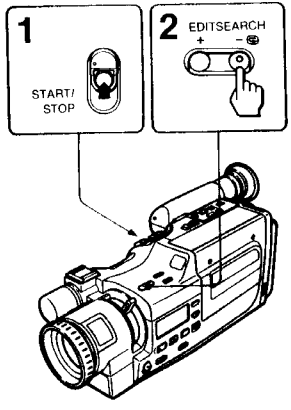
5 **Turn the viewfinder lens adjustment ring so that the indicator displayed on the viewfinder screen comes into sharp focus.**

Adjustment of the position of the viewfinder lens is necessary only for your initial use, or for use after someone else.

Note

- **If you leave the unit in the recording pause mode for 5 minutes or more, the unit will be automatically turned off. To resume recording pause mode, slide the STANDBY switch down once and slide it up again.**
- For "once-only" events, it is strongly recommended to have a trial run to check that eveything is working perfectly.
- PCM recording/playback is not possible with this unit. The PCM sound recorded or after-recorded with another recorder cannot be played back with this unit.

F-3



F-3

To check the last portion of the previous recording

1 **Set the recorder in recording pause mode by pressing the START/STOP button.**

2 **Press the "−" side of the EDITSEARCH button momentarily.**

The last few seconds of the recorded portion are rewound and then the recorded picture is monitored on the viewfinder screen. The unit then enters the recording pause mode.

Note

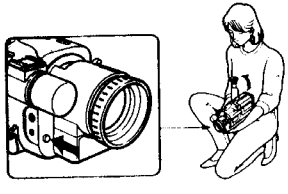
If the picture has not been recorded

The video head may be contaminated. Clean the heads using the Sony V8-25CL video head cleaning cassette.

After using

Slide the STANDBY switch down and set the POWER switch to OFF. (You need not press the center button when setting the switch to OFF.)

F-4



F-4

For low position recording

The viewfinder can be turned up 90 degrees.

1 **Slide the STANDBY switch up.**

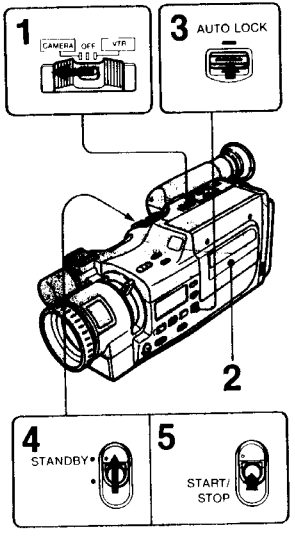
2 **Press the START/STOP button on the front.**

F-1

How to Record

Hold the camera recorder as in the illustration.
If your nose touches the recorder, adjust the angle of the viewfinder. F-1

F-2



F-2

1 **While pressing the small button, set the POWER switch to CAMERA.**

2 **Insert the cassette.**

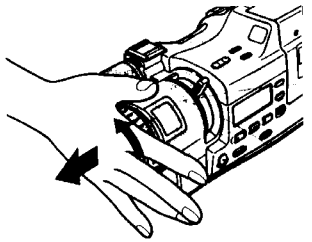
3 **Set the AUTO LOCK switch to upper AUTO LOCK position. (green portion)**

4 **Slide the STANDBY switch up.**
The unit will enter the recording pause mode.
STBY: Displayed in the viewfinder during recording pause mode.

5 **Press the START/STOP button.**
Recording will start.
REC: Displayed in the viewfinder during recording.

To stop recording, press the START/STOP button.
The unit will enter the recording pause mode.
Avoid rough handling or mechanical shock to the unit. A smooth transition between scenes may not be made.

F-5



Easy Camera Recording with Automatic Adjustment

F-5

When removing the lens hood, press it with the palm of your hand and turn it counterclockwise.

Note on power source
If the POWER switch is moved during recording, the tape will stop.

Notes on light sources
- Should you shoot a subject in bright conditions, such as sunlight, just after shooting in a dark place, the picture may not appear on the viewfinder screen. In this case, move the camera away from the subject to resume the normal condition.
- A vertical band may appear when a subject such as a candle flame or a light is shot against a dark background

Notes on playback on another VCR
- To view the picture which has been recorded on this unit, set the monitor switch of the recorder for playback to the STD (standard) position.
- When recording on this unit using a tape on which PCM stereo sound has previously been recorded, set the monitor switch of the video cassette recorder for playback to the STD (standard) position. Otherwise, the sound may not be heard or may be distorted.

Notes on automatic adjustment
- During recording, do not cover the white balance sensor infrared beam emitter and detector.
- During recording with auto focusing, do not turn or stop the focus ring forcibly.
- Keep the lens and the white balance sensor clean.

Under certain conditions, auto focusing will not operate properly (see page 50).

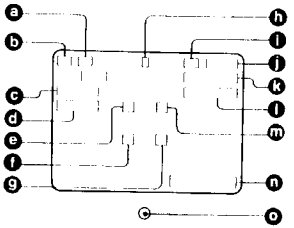
Use of an External Microphone

The built-in microphone is an omni-directional microphone which picks up sounds from all directions.

A variety of optional microphones.
- Omni-directional microphone: To pick up sounds equally from all directions
- Uni-directional microphone: To pick up specific sounds
- Supercardioid microphone: To isolate a sound
- Zoom microphone: To allow the field of recording to be changed.

Note
The built-in microphone will not operate when an optional microphone is connected to the MIC jack.

F-6



Easy Camera Recording with Automatic Adjustment

Indications Inside the Viewfinder and in the Display Window F-6 F-7

[a] (Back light)
The indication lights while the BACK LIGHT button has been pressed.

[b] , (White balance)
Each push of this button cyclically changes functions.
: The white balance is outdoor mode.
: The white balance is indoor mode.
When the indication does not light, the white balance is set to auto.

[c] Shutter speed (see page 64.)

[d] FADER (see page 72)
The indication lights while the FADER button has been pressed.

[e]
The indication blinks slowly when the battery is weak and blinks rapidly when the battery is exhausted.

[f] (Dew)
The indication blinks when moisture condensed inside the unit.

[g] /
The indication blinks slowly when the unit cannot function normally.
The indication blinks when the gap of the head is clogged.
Clean the heads using the video head cleaning cassette.

[h]
The indication lights while manual focusing. While auto focus function does not operate correctly, the indication blinks. (See page 52.)

[i]
The indication lights when playing back in the LP mode.

[j] STBY/REC
The indication lights in the following modes.
STBY
Recording is momentarily stopped (recording pause mode).
REC
Recording is going on.

[k] Tape counter

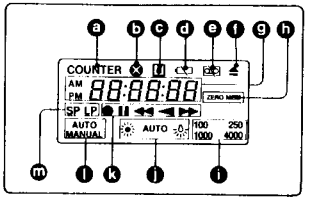
[l] ZERO MEM
The indication blinks when the ZERO MEM button is pressed.

[m] (Tape end)
The indication blinks slowly when the tape is out or close to the end. The indication blinks rapidly when the tape is at its end.

[n] Date or Time

[o] Camera recording/battery lamp
The indication lights during camera recording.
It blinks when the battery is weak.

F-7



F-7

- a COUNTER indicator
- b Blinks when the slit in the head is clogged.
- c Moisture condensation inside the unit.
- d Blinks when the battery is weak.
- e Lights steadily when no cassette is inserted. Blinks when the tape approaches its end or the safety tab of the inserted cassette is slid out (red).
- f Lights steadily during cassette ejection. Blinks when the unit cannot function normally.
- g Indicates the time/date or the tape counter
- h ZERO MEM (memory) indicator
- i Shutter speed indicator
- j White balance indicator
- k Tape operation mode indicators
- l Focusing mode indicator
- m Tape speed indicator

Function of the AUTO LOCK Switch

When the AUTO LOCK switch is set to AUTO LOCK (green position), the white balance, shutter speed (1/60), and focus are adjusted automatically. The back light function does not work. But under certain circumstances, manual adjustment is better for effective recording.

When the AUTO LOCK switch is set to the lower position, each manual function works as follows.

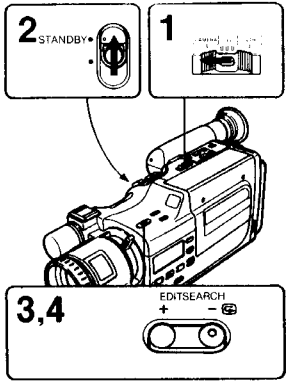
Each push of the button cyclically changes each function and the indication on the viewfinder (or display window) changes.

WHITE BALANCE See page 58.	No indication · ☀ · ☁ (Auto)
SHUTTER SPEED See page 62.	No indication · 100 · 250 · 1000 · 4000 (1/60)
FOCUS See page 52.	No indication · ■ (Auto) (Manual)
BACK LIGHT See page 60.	No indication · ▭

Notes

- Just after the battery pack is attached to the recorder, even if the AUTO LOCK switch is set to the lower position, the AUTO LOCK function will work.
- If the AUTO LOCK switch is set to AUTO LOCK after each function is adjusted manually, and then set to the lower position again, the previous manual setting will be recalled.

F-8



Instant Playback on the Spot F-8

You can monitor the picture just recorded on the viewfinder screen.

1 **While pressing the small button, set the POWER switch to CAMERA.**

2 **Slide the STANDBY switch up.**

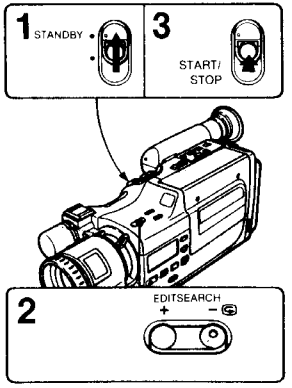
3 **Press the "−" side of the EDITSEARCH button to reverse the picture.**

4 **Press the "+" side of the EDITSEARCH button to view the playback picture.**

Note

While monitoring the picture in the viewfinder screen, the sound will be muted.

F-9



During Recording, to Record Again on the Previous Recorded Portion F-9

Normally, smooth recording can be made even if the recording is stopped and started again, or even if the power is turned off and on again, provided that the cassette is not removed. But, if the cassette has been removed, proceed as below.

1 **Slide the STANDBY switch up.**

2 **Locate the point from which the recording is to begin again by monitoring the picture on the viewfinder screen.**
Press the "+" side of the EDITSEARCH button to advance the picture at a normal playback speed, or the "−" side to reverse the picture.

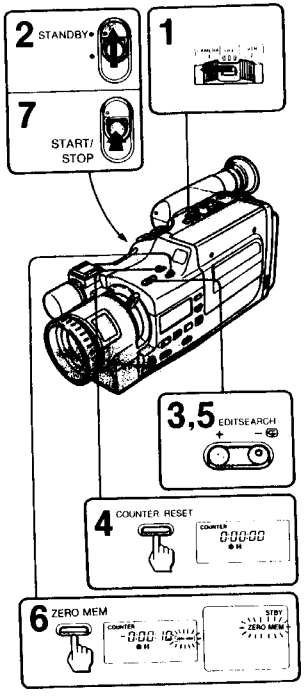
Release the EDITSEARCH button at the desired point.
The unit will be set to recording pause mode.

3 **Press the START/STOP button to start recording.**

Insert Recording 1
— Using EDITSEARCH button

You can insert (record) video and audio simultaneously from the camera onto any recorded tape.

G



Operation G

When performing insert recording, the playback picture can be monitored on the viewfinder screen.

1 While pressing the small button, set the POWER switch to CAMERA.

2 Slide the STANDBY switch up to set the unit to recording pause mode.

3 Keep pressing the "+" or "–" side of the EDITSEARCH button and release the button at the point where the insert should end.
The unit will be set to recording pause mode.

4 Display the counter in the display window and press the COUNTER RESET button.
The counter is reset to zero.
(For an accurate ending point, press the RESET button immediately after the EDITSEARCH button is released and while the still picture is displayed.)

5 Keep pressing the "–" side of the EDITSEARCH button and release the button at the point where the insert should begin.

6 Press the ZERO MEM button.
The insert ending point is stored in memory.

7 Press the START/STOP button.
Insert recording will begin.

The insert recording will stop automatically near the counter zero point.

To cancel ZERO MEM mode
Press the ZERO MEM button so that the ZERO MEM indicator disappears.

To insert the date or time

1 Follow steps 1 through 6 given above.

2 Press the DATE or TIME button.
The date or time indication appears on the viewfinder screen.

3 Press the START/STOP button.
The insert recording will begin.

Notes on ZERO MEM mode
ZERO MEM mode is cancelled automatically in the following cases.
- When an insert recording is completed
- When the position of the POWER switch is changed
- When the power is turned off.
- When the cassette is ejected.

To restore it, press the ZERO MEM button again.

Notes
- When recording pause mode lasts for approximately 5 minutes, pause mode will be automatically released and the unit will be set to stop mode.
- When the inserted tape is played back, the picture may be distorted at the end of the inserted program.

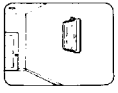
H-2

Poor Conditions for Auto Focusing H-2

To shoot subjects listed below you must use manual focusing.

[a]

[a] Black objects which absorb the infrared beam
Ex. dark curtains or shade

[b] 

[b] Objects in which the infrared reflection disperses
Ex. a smooth slanting surface (Auto focusing functions when the camera is aimed squarely at the subject.)

[c]

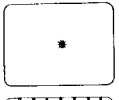
[c] Objects in which the infrared reflection is not sufficient
Ex. bushes, grass or plants in the telephoto position

[d]

[d] Objects in which the infrared beam is reflected too much
Ex. traffic signs, a white wall, a mirror, or a subject through plate glass

[e]

[e] Objects not solid
Ex. fireworks, candle flame or smoke

[f] 

[f] Extremely small objects which do not cover more than 1/16 of the viewfinder's area
Ex. insects

[g]

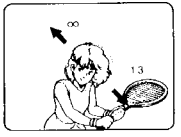
[g] When there are other objects between the shooting object and this unit
Ex. an animal inside a cage or baby inside a cot

[h]

[h] Moving objects
Ex. a crowd or sports with lots of movement

- **Objects which emit infrared beams themselves**
  Ex. automatic doors or fluorescent lights
- **Objects more than 15 meters (49 feet) away from the recorder**

H-1



Auto Focus Function

Auto focusing system of this camera recorder
This recorder adjusts focus automatically by emitting an infrared beam at the objects to be shot and then detecting the reflected beam. When the subject is approximately 3 meters away from the camera recorder, the focus is sharpest in the center of the screen. The camera recorder has the tendency, however, to focus a bit lower to the right when the subject is within 3 meters, and a bit higher to the left when the subject is more than 3 meters away. H-1

As the auto focusing of this camera recorder utilizes an infrared beam, it might malfunction when you use the camera recorder near another equipment that also emits an infrared beam such as a TV or VCR remote commander, or another camera recorder that uses an infrared beam for auto focusing.
It might also cause malfunctioning of such equipment.

Manual Focus Function

Under most shooting condition, the Auto Focus function of this unit brings the subject into focus automatically. However, there are some conditions in which the Auto Focus function may not operate correctly. Under the conditions given next use the manual focusing function.

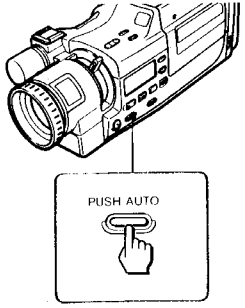
Some helpful hints

- When shooting a scene with lots of movement in bright light, the subject can be kept in good focus by setting the zoom lever to the wide angle position (W) and the focus ring to 2 m, regardless of the distance between the subject and the recorder.
- When shooting in low light situations such as indoors, the depth of field in proper focus is very shallow. For best results, shoot at wide angles, after focusing in telephoto.
- The figures on the focus ring indicate the distance between the subject and the ⊕ mark.
- Recommended illumination of this unit is more than 300 lux (28 footcandles). If shooting is done indoors or under other circumstances where light is insufficient, video lights must be used for best results. Under adequate light condition, the depth of field in proper focus is wider and a sharper picture will be recorded.

Other Uses of Manual Focusing

- When using special effect lenses or filters
- When shooting still subjects on a tripod
- To save battery wear
  (When the AUTO LOCK switch is set to AUTO LOCK, the auto focusing operates to move the focus ring automatically even in recording pause mode. This causes the battery to wear continuously.)
- For focusing in close-up shooting, see page 68.

H-4



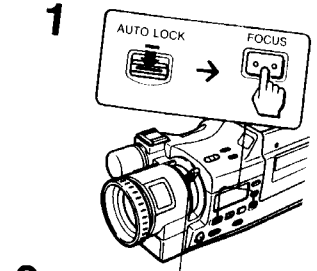
Instant Auto Focus during Manual Focusing H-4

While recording in manual focusing, you can switch to the automatic focus mode depending upon the shooting condition by pressing the PUSH AUTO button. The automatic focus function is active while the button is pressed.

To return to the manual focusing, release the PUSH AUTO button.

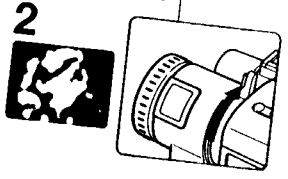
H-3

How to Use the Manual Focus Function H-3

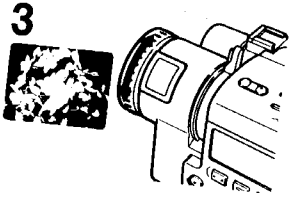


1 Set the AUTO LOCK switch down and press the FOCUS button for setting the video camera recorder to the manual focusing mode.
The white mark (▮) will be shown in the viewfinder.

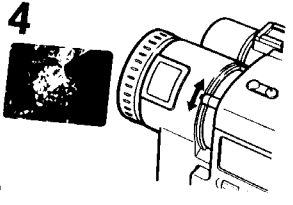
The last manual focus setting will be recalled.



2 Turn the manual zoom lever to the telephoto position (6B) to make the subject as large as possible in the viewfinder.



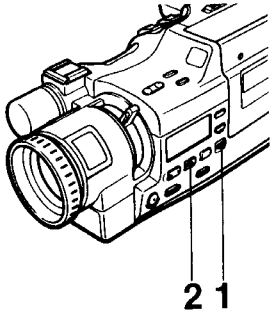
3 Turn the focus ring to obtain sharp focus.



4 Set the desired shot length using the zoom lever.

It is also set using the power zoom button.

I-2



How to Use the Manual White Balance Function I-2

1 **Set the AUTO LOCK switch down.**
The white balance mode is the same as the previous mode.

2 **Press WHITE BAL button once or twice so that the appropriate white balance indicator appears on the viewfinder screen.**
To record the subject indoors (3200 K): ☼
To record the subject outdoors (5800 K): •

Recommended setting for various subjects
indoor: coming in from outdoor to indoor, candle flames in darkness, subjects in the spotlight, scenes before sunrise, subjects in a tunnel (illuminated by natrium lamps), neons, etc.
outdoor: getting out from indoor to outdoor, sunset, fireworks, subjects in a sunny window, etc.

Note
Do not cover the white balance sensor.

Each push of the WHITE BAL button cyclically changes each function.

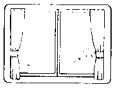
Display window	AUTO → • → ☼ → AUTO
Viewfinder screen	No indication → • → ☼ → No indication

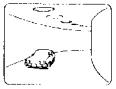
I-1

[a]

[b]

[c]




[d]

Poor Condition for Automatic White Balance Function

I-1

In most cases, the auto white balance function of this unit adjusts the white balance automatically. However, if it does not work correctly in the conditions listed below, adjust the white balance manually.

[a] Insufficient light
[b] When lighting conditions change quickly
[c] When the light source for the subject is different from that illuminating this unit e.g. when the subject is in a spotlight, or when the subject is outdoors but the camera is indoors, etc.
[d] Special light sources such as natrium lamps, the setting sun, etc.

K-1

K-2

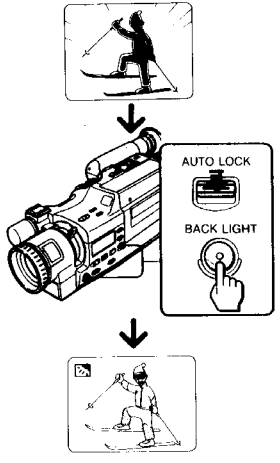
When a fast-moving object is recorded at a normal shutter speed, its still picture may not be seen when played back K-1.

This can be improved by increasing the shutter speed K-2.
The shutter speed of this unit can be selected from five speeds, 1/60 (normal speed), 1/100, 1/250, 1/1000, 1/4000.
However, when the shutter moves fast, it will not allow enough light to come into the lens, so the picture will be dark. Therefore, when recording at a high shutter speed, record in a brighter place than usual.

Choose an appropriate shutter speed according to the place and situation.
See the chart below for examples.

Example use	Recommended shutter speed
• On clear days, recording golf or tennis scenes (To view the hit ball clearly in the pause mode, set to 1/4000) • Recording the skiers	1/4000 or 1/1000
• On overcast days, recording a moving merry-go-round or jet-coaster • Recording outdoors from inside a vehicle (for stable shooting)	1/250
• Instead of the ND2 filter (To reduce the exposure level to approx. 1/2) • Recording indoors (for stable shooting)	1/100

J



In this unit iris is automatically controlled. However, when shooting a subject that is backlit, that is the light source is coming in from the back of the subject, you should do the following steps.

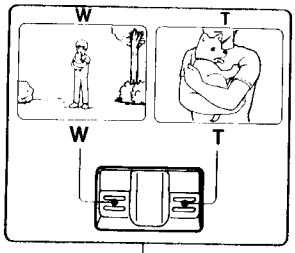
1 **Set the AUTO LOCK switch down.**
The previous back light mode which is before setting the AUTO LOCK switch to the upper position will be recalled.

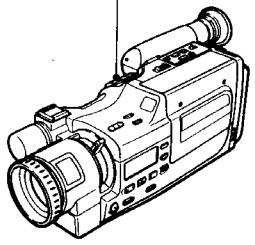
2 **Press the BACK LIGHT button.**
The indication appears in the viewfinder screen when the BACK LIGHT button has been pressed.

After shooting that particular scene, be sure to press the BACK LIGHT button again to release it to record. Otherwise the recorded picture will be too bright.
The indication goes out.

The size of the subject in the scene can be changed.

L-1



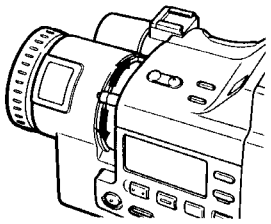


Power Zoom L-1

— for smooth and constant zooming

Press the "T" side of the power zoom button for telephoto and the "W" side for wide-angle.
The zoom lever will move automatically.

L-2



Manual Zoom L-2

— to create a dramatic effect

Turn the zoom lever upward for telephoto and downward for wide-angle.

For more zooming effect
The focal length of this unit is 8.5 mm to 68 mm. Converted into the focal length of a 35 mm camera, this means approximately f-43 mm to 340 mm.

Un objet filmé avec une vitesse d'obturation normale risque de paraître flou à la lecture en arrêt sur image K-1.
Il est possible de pallier à cet inconvénient en augmentant la vitesse d'obturation K-2.

Cet appareil donne le choix entre cinq vitesses d'obturation: 1/60 (vitesse normale), 1/100, 1/250, 1/1000 et 1/4000. Cependant, si l'obturateur se déplace rapidement, il ne laisse pas entrer suffisamment de lumière, et l'image est sombre. Donc, pour filmer à une vitesse d'obturation élevée, il faut choisir un endroit mieux éclairé que d'habitude.

Choisir la vitesse d'obturation appropriée en fonction de l'endroit et de la situation.
Consulter les exemples du tableau ci-dessous.

Exemple d'utilisation	Vitesse d'obturation recommandée
• Par temps clair, enregistrement des mouvements de golf ou de tennis (Pour voir nettement la frappe de la balle en mode de pause, régler sur 1/4000) • Enregistrement de skieurs	1/4000 ou 1/1000
• Par temps couvert, enregistrement d'un manège ou de montagnes russes • Enregistrement d'extérieur depuis l'intérieur d'un véhicule (pour une prise de vues stable)	1/250
• Au lieu d'utiliser un filtre ND2 (pour réduire le niveau d'exposition de moitié environ) • Enregistrement en intérieur (pour une prise de vues stable)	1/100

Cuando filme motivos que estén moviéndose rápidamente con la velocidad de obturación normal, sus imágenes fijas obtenidas en el modo de reproducción no podrían ser nítidas K-1.

Esto podrá mejorarse aumentando la velocidad de obturación K-2.

Con esta unidad podrá seleccionar cinco velocidades de obturación, 1/60 (velocidad normal), 1/100, 1/250, 1/1000, 1/4000.
Sin embargo, cuando la velocidad de obturación sea alta, no se permitirá entrar luz suficiente en el objetivo, y la imagen grabada será oscura. Por lo tanto, cuando filme con la velocidad de obturación alta, realice la filmación en un lugar más claro que el usual.

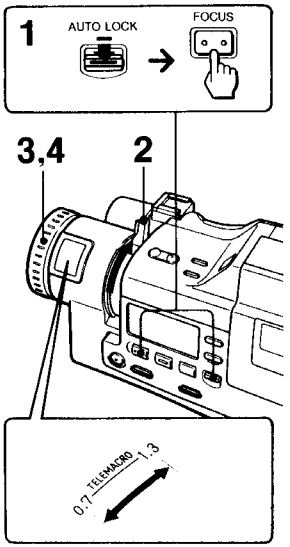
Elija la velocidad de obturación apropiada de acuerdo con el lugar y la situación.
Consulte la tabla siguiente como referencia.

Ejemplo de empleo	Velocidad de obturación recomendada
• En el día despejado, para filmar el estilo de golf o tenis (Para contemplar claramente la bola en movimiento en el modo de pausa, póngalo en 1/4000) • Filmación de una persona que esquia	1/4000 o 1/1000
• En el día nublado, para filmar el tiovivo o montaña rusa en movimiento • Filmación en exteriores desde el interior del vehículo (para la filmación estable)	1/250
• En cambio del filtro ND2 (Para reducir el nivel de exposición a aprox. 1/2) • Filmación en interiores (para la filmación estable)	1/100

Close-up (Macro)

Even tiny objects can literally fill the screen for dramatic close-up effects.
Remove the lens hood before operation.

M-1



Tele-Macro Shooting M-1

Using this setting, you can record from the video camera recorder within 0.7 to 1.3 meters from the subject.

1 **Set the AUTO LOCK switch down. For manual focusing, press the FOCUS button.**

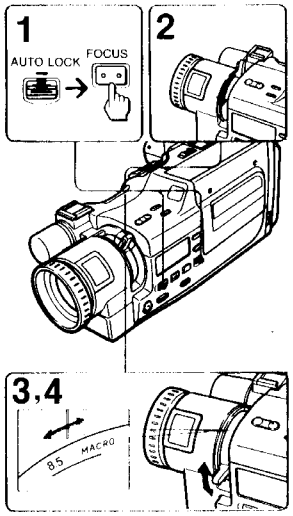
2 **Turn the zoom lever to the telephoto end position (6S)**

3 **Turn the focus ring within the TELEMACRO range (1.3 – 0.7)**

4 **Turn the focus ring to bring the subject into sharp focus.**

Note
If you turn the zoom lever from the telephoto end position to wide, the screen may become dark.

M-2



Wide-Macro Shooting M-2

By recording from as close as 1 cm, a dramatic close-up effect can be obtained with a deeper field compared to the tele-macro picture.

1 **Set the AUTO LOCK switch down and press the FOCUS button to set the manual focusing.**

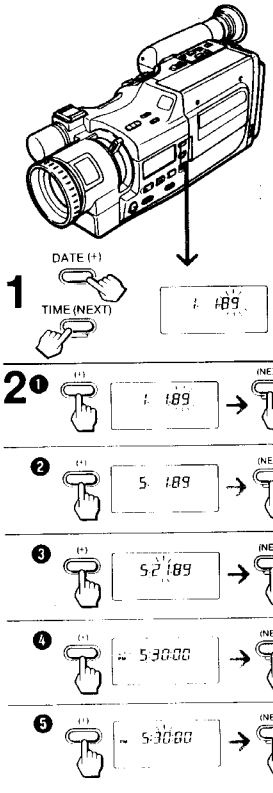
2 **Turn the zoom lever to the wide-angle position.**

3 **Press the green macro set button turning the zoom lever to the wide-angle position further.**

4 **Turn the zoom lever within the MACRO range in order to focus sharply.**

Notes
- Auto focusing does not function properly in macro shooting.
- When shooting in macro, the depth of field is very shallow, so care must be taken to focus sharply. To keep the subject in focus, use a tripod or monopod to maintain stable picture.
- Zooming is not possible during wide-macro recording. To change the size of the subject, move the camera recorder closer or farther away.

O-1



Once the date and the current time are adjusted, the date or time can be recorded together with the picture.

Before setting the date and time, make sure that the power source and lithium battery are installed.
If you install a new lithium battery, re-set date and time.

To Set Date and Time O-1

1 Press the DATE and TIME buttons simultaneously for more than 3 seconds.
The date indication will appear in the display window (date/time setting mode).
The DATE button now functions as the + button and the TIME button functions as the NEXT button.

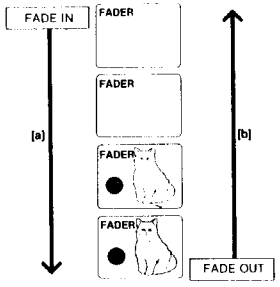
2 Adjust the ❶ year, ❷ month, ❸ day, ❹ hour and ❺ minute in sequence, following the illustration.
First adjust the blinking digits with the + button, and then press the NEXT button. After adjusting the minute digits, press the NEXT button at the same time with an announced time signal.

The clock starts operating. There is no need to readjust the date and time as long as the lithium battery remains.

The + button can be pressed in two ways
- When you keep the button pressed, the digits will advance continuously.
- When you press and immediately release the button, the digits will advance by one.

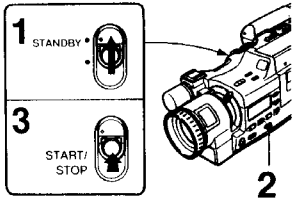
To clear the time indication from the display
Press the TIME (NEXT) button again.

N-1



With fade-in, the picture and sound will gradually fade in from a white ground. [a]
With fade-out, the picture and sound will gradually fade out to white. [b]
A natural beginning and ending effects can be added by using fade-in at the beginning of a recording and fade-out at the end of a recording.

N-2



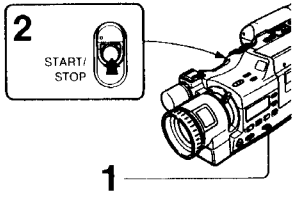
How to Fade-in N-2

1 Slide the STANDBY switch up to set the unit to the standby mode.

2 Press the FADER button.

3 Press the START/STOP button.
Fade-in will be performed and recording will start.

N-3



How to Fade-out N-3

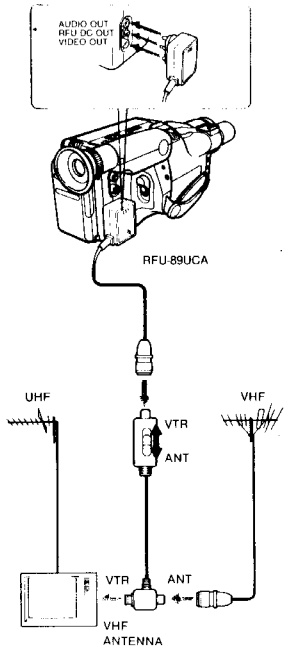
1 While recording, press the FADER button.

2 Press the START/STOP button.
Fade-out will be performed and then recording will stop.

To cancel the fade-in and fade-out function
Before pressing START/STOP button, press the FADER button again.

Note
Fade-in or fade-out is cancelled automatically after it has been performed.

P-1



When the VCR is connected to the TV, refer to the pages 88, 90 and 92.

Connecting a TV

Connecting a TV without audio/video input connectors P-1

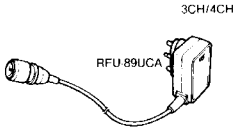
1 Connect the RFU-89UCA RFU adaptor to the CCD-F50.

2 Connect the VHF antenna, CCD-F50 and TV to the antenna selector (supplied with the RFU-89UCA).
Use a 75-ohm coaxial cable for antenna connection.

3 Set the selector switch on the antenna selector as follows:

For viewing a playback picture → VTR
For viewing TV programs → ANT

P-2



On the TV channel for the video camera recorder P-2

Whenever you view the playback picture, set the channel selector of the RFU-89UCA to either VHF channel 3 CH or 4 CH which is not active in your area and select the same channel on the TV.

Recording Date or Time

To check the preset date and time
Press the DATE or TIME button in the recording pause mode. When the same button is pressed again, the indication goes out.

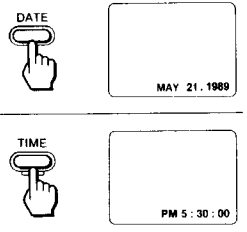
To readjust an incorrect date or time
Set the unit to date/time setting mode and press the NEXT button repeatedly until the incorrect digit blinks. Correct it with the + button and press the NEXT button. After adjusting the minute digits, press the NEXT button at the same time with an announced time signal.

To Record the Date or Time O-2

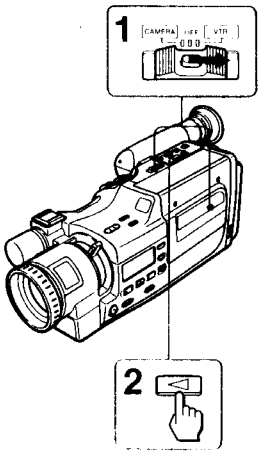
During camera recording or in recording pause mode, press the DATE or TIME button to display the date or time on the viewfinder screen.
The date or time being displayed will be recorded together with the picture.

To stop recording the date or time
Press the DATE or TIME button again. The picture recording will continue.

O-2



Q-1



Turn on the TV (or color monitor), and select the channel for viewing a playback picture (or set the TV/VIDEO selector to VIDEO). Q-1

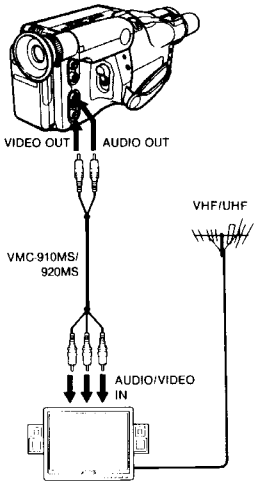
1 While pressing the small button, set the POWER switch to VTR, and insert a cassette.

2 Press the ◁ button.
Playback will start.

To stop the tape, press the □ button.

After using, be sure to set the POWER switch on the recorder to OFF.

P-3



Connecting a TV (or color monitor) equipped with audio/video input connectors P-3

Leave the TV antenna cable connected to the TV.

1 Connect the CCD-F50 to the TV using the optional VMC-910MS/920MS audio/video cable.

2 Set the TV/VIDEO selector button on the TV as follows:

For viewing a playback picture → VIDEO
For viewing TV programs → TV

The following connections make both TV program viewing/recording and tape playback possible.

Combination of the Equipment to be Used

Connection example 1 (page 88)
To connect the VCR without input selector.

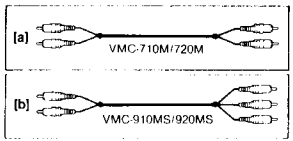
Connection example 2 (page 90)
To connect the VCR with an input selector

Connection example 3 (page 92)
To connect the TV tuner and color monitor or TV with audio/video input and output jacks

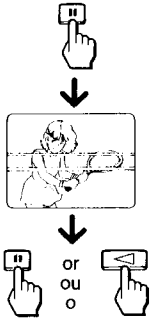
R-1

Connecting Cables R-1

- For antenna cable connections, use 75-ohm coaxial cables.
- For video/audio connection, use an optional audio/video cable to match the connectors on the equipment to be connected.
  [a] VMC-710M/720M for monaural equipment
  [b] VMC-910MS/920MS for stereo equipment



Q-2



To view a still picture Q-2
Press the ❚❚ button during playback. To resume playback, press the ❚❚ button again or the ◁ button.

Monitoring a High-Speed Picture —SKIP SCAN

During playback

1 **In the playback mode, press the ◀◀ or ▶▶ button.**
The picture will be monitored at high speed as long as it is kept pressed.

2 **Release the ◀◀ or ▶▶ button at the desired point.**
The picture will be monitored at high speed as long as it is kept pressed.

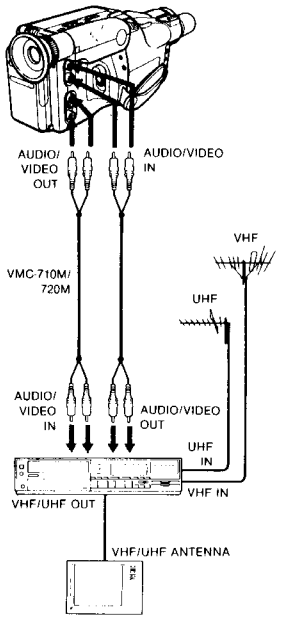
During fast-forward or rewind

1 **Press the ◀◀ button in fast-forward mode or press the ▶▶ button in rewind mode.**
The picture is displayed while the button is kept pressed.

2 **Release the ◀◀ or ▶▶ button to resume normal fast-forward or rewind mode.**

Notes
- If you move the position of the POWER switch during playback, the tape will stop.
- When the pause mode lasts for 5 minutes or more, the unit will automatically enter the stop mode.
- Streaks will appear and the sound will be muted in the still picture and the high-speed picture.

R-3



Connection Example 2 R-3

To connect the VCR with an input selector

Connections
Connect the equipment as shown in the illustration.

TV program recording

1 **Turn on the VCR and TV.**

2 **While pressing the small button, set the POWER switch on the CCD-F50 to VTR.**

3 **Select the channel for the VCR on the TV.**

4 **Set the input selector to TUNER, the TV/VTR select button to VTR and select the TV channel to be recorded on the VCR.**

5 **Insert a cassette into the CCD-F50 and slide the ● REC switch.**
Recording will start.

To view another TV program while recording
Set the TV/VTR select button on the VCR to TV and select the desired program on the TV.

Playback

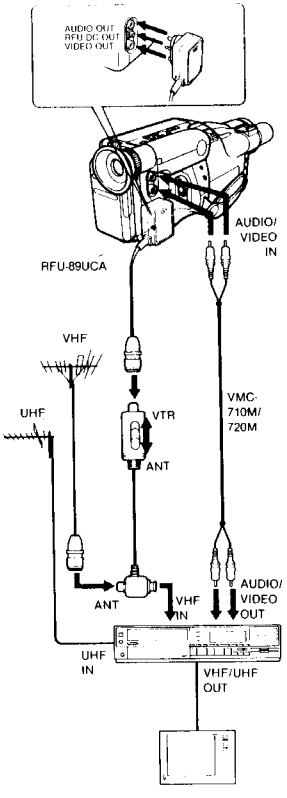
1 **Turn on the VCR and TV.**

2 **While pressing the small button, set the POWER switch on the CCD-F50 to VTR.**

3 **Set the input selector on the VCR to LINE and select the channel for the VCR on the TV.**

4 **Insert a cassette into the CCD-F50 and press the ◁ button.**
Playback will start.

R-2



Connection Example 1 R-2

To connect the VCR without input selector

The RFU-89UCA RFU adaptor is required.

Connections

1 **Connect the equipment as shown in the illustration.**

2 **Select the channel selector of the RFU-89UCA to either VHF channel 3 CH or 4 CH which is not active in your area.**

3 **Set the selector switch on the antenna selector as follows:**

For viewing a playback picture or a picture being recorded on the CCD-F50 → VTR
For viewing TV programs · ANT

TV program recording

1 **Turn on the VCR and TV.**

2 **While pressing the small button, set the POWER switch on the CCD-F50 to VTR.**

3 **Set the selector switch on the antenna selector to ANT and select the channel for the VCR on the TV.**

4 **Select the TV channel to be recorded on the VCR.**

5 **Insert a cassette into the CCD-F50 and slide the ● REC switch.**
Recording will start.

To view another TV program while recording
Set the TV/VTR select button on the VCR to TV and the selector switch on the antenna selector to ANT. Select the desired program on the TV.

Playback

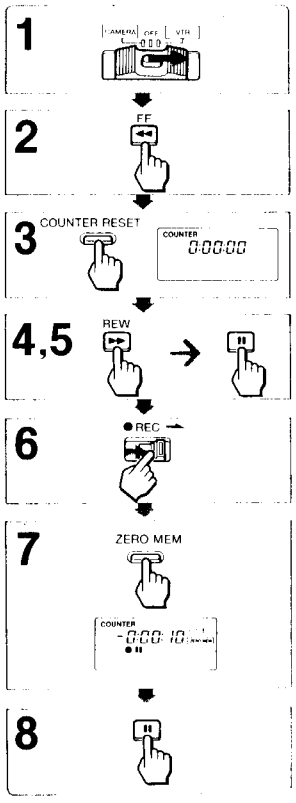
1 **Turn on the TV.**

2 **While pressing the small button, set the POWER switch on the CCD-F50 to VTR.**

3 **Set the selector switch on the antenna selector to VTR and select the channel for the VCR on the TV.**

4 **Insert a cassette into the CCD-F50 and press the ◁ button.**
Playback will start.

S



To Insert a TV Program or a Picture from Another VCR S

Monitor the picture being inserted on the viewfinder screen.

1 **While pressing the small button, set the POWER switch to VTR.**

2 **Locate the point on the tape where the insert should end by pressing the ◀◀ button during playback.**

3 **Display the counter in the display window and press the COUNTER RESET button.**
The counter is reset to zero.

4 **Press the ▶▶ button during playback to rewind the tape a little further than the point where the insert should begin.**

5 **Release the ▶▶ button to resume playback and press the ❚❚ button at the insert starting point.**

6 **Slide the ● REC switch in the arrow direction to set the unit to recording pause mode.**

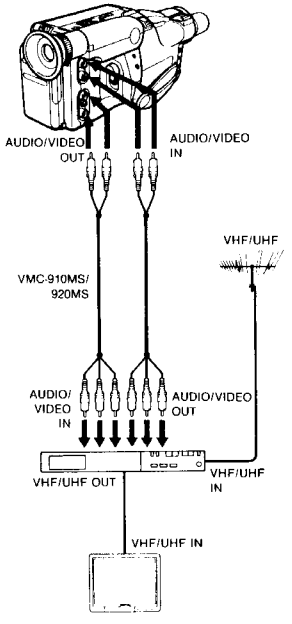
7 **Press the ZERO MEM button.**
The insert ending point is stored in memory.

8 **To start recording, press the ❚❚ button.**

The insert recording will stop automatically near the counter zero point.

To cancel ZERO MEM mode
Press the ZERO MEM button so that the ZERO MEM indicator disappears.

R-4



Connection Example 3 R-4

To connect the TV tuner and color monitor or TV with audio/video input and output jacks

Connections
Connect the equipment as shown in the illustration.

TV program recording

1 **Turn on the TV tuner or TV.**

2 **While pressing the small button, set the POWER switch on the CCD-F50 to VTR.**

3 **Set the input selector on the TV tuner or TV to TV and select the TV channel to be recorded.**

4 **Insert a cassette into the CCD-F50 and slide the ● REC switch.**
Recording will start.

Playback

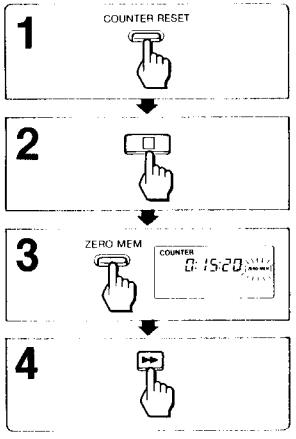
1 **Turn on the TV tuner or TV.**

2 **While pressing the small button, set the POWER switch on the CCD-F50 to VTR.**

3 **Set the input selector on the TV tuner or TV to VIDEO.**

4 **Insert a cassette into the CCD-F50 and press the ◁ button.**
Playback will start.

T-2



To Return to a Pre-registered Point T-2

1 During recording or playback, press the COUNTER RESET button at the point you later want to locate.

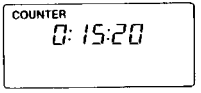
2 Press the □ button when the recording or playback has finished.

3 Press the ZERO MEM button.
The "ZERO MEM" indicator will blink in the display window and viewfinder.

4 Press the ▶▶ or ◀◀ button.
The tape will be rewound or sent forward and stop automatically when the counter reaches approximately zero.

Notes
- The ZERO MEM button does not function during recording or playback mode.
- Be sure to press the ZERO MEM button when the tape is stopped.
- The ZERO MEM mode is cancelled automatically once the tape is rewound or sent forward to zero.

T-1



During recording or when a tape recorded in the SP mode is played back, the digits on the counter indicate the actual recording or playback time. When a tape recorded in LP mode on another recorder is played back on this unit, the counter counts approximately half the actual playback time.

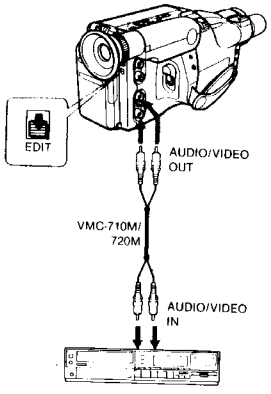
E.g. When the counter indicates "0:15:20" during playback of an LP-recorded tape, the tape was played back for approximately 30 minutes 40 seconds from the counter zero position. T-1

To Index the Whole Tape

Press the COUNTER RESET button at the beginning of the tape so that the counter shows "0:00:00". By noting the counter reading at a particular point, you can easily find that point later by referring to the tape counter.

Notes
- The counter reading and the point of the tape may not correspond exactly.
- The counter also operates for a blank, unrecorded portion of a tape.
- There will be a time lag of several seconds on the counter reading after repeated fast-forward and rewind operations.

U-2



To Edit from the CCD-F50 to Another VCR U-2

1 **While pressing the small button, set the POWER switch on the CCD-F50 to VTR and turn on the other VCR.**

2 **Slide the EDIT switch on the CCD-F50 to EDIT.**

3 **Set the input selector on the VCR to LINE.**

4 **Press the ❚❚ button on the CCD-F50 during playback at the point where you want to start recording.**

5 **Press the record button on the other VCR, pressing the ❚❚ button.**

6 **Press the ❚❚ buttons again simultaneously on both units.**
Recording will start.

When the VCR to be used is a stereo type, use the VMC-910MS/920MS connecting cord.

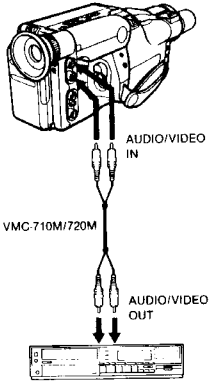
After editing, turn off both units and be sure to slide the EDIT switch to the upper position.

To cut off an unnecessary portion
Press the ❚❚ button on the recorder at the beginning of the unnecessary portion.
Release it where you want to resume recording.

Function of the EDIT switch
Slide this switch down whenever you edit tapes. Signal loss that results from tape-to-tape transfer will be reduced, achieving more accurate signal transfer.
When recording or playing back normally, keep this switch in the upper position.

Note
Television programs, films, video tapes and other materials may be copyrighted.
Unauthorized recording of such material may be contrary to the provisions of the copyright laws.

U-1



To Edit from Another VCR to the CCD-F50 U-1

1 **While pressing the small button, set the POWER switch on the CCD-F50 to VTR.**

2 **Press the ❚❚ button on the VCR during playback at the point where you want to start recording.**

3 **While pressing the ❚❚ button, slide the ● REC switch on the CCD-F50 in the arrow direction.**

4 **Press the ❚❚ buttons on both units again simultaneously**
Recording will start.

Lighting

Try to shoot scenes with the sun at your back

When shooting a scene when the light source is in back of the subject, the subject will be recorded too dark and the background too light.

The followings are also backlight conditions:

- The subject is indoors and there is a window behind the subject.
- Bright sources such as fluorescent or incandescent lamps are included in the scene.
- A person wearing white or glossy clothes in front of a white background. In this case, the face will be recorded too dark.

For the sharpest pictures, you need the best light

For the most brilliant color in your scenes, a sufficient light level must be maintained. If shooting is done indoors or under other circumstances where light is insufficient, lights must be used for best results.

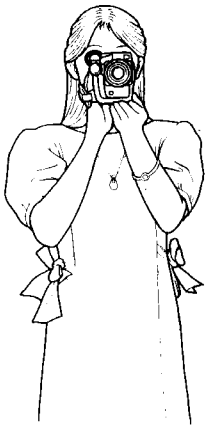
What kind of light is best? Choosing the right lights

Photography lamps or halogen lamps are recommended. For best results, use of the Sony video lights are recommended as their weight and low heat output levels allow safe, direct connection to the camera.

For lighting of a wide area for easy use—
reflector flood light

To emphasize the subject—use a reflector spotlight.

V



Basic Camerawork

Getting stable pictures V

For hand-held shots, holding the recorder properly is the key.

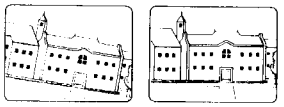
- Hold the recorder firmly and secure it with the grip strap so that it is easy to manipulate the recorder with your thumb.
- Breathe gently.
- Place your right elbow firmly against your side.
- Stand opposite to the subject and plant your feet firmly in a comfortable position.
- Place your eye firmly against the viewfinder eyecup.
- Try to keep both eyes open.
- Place your left hand under the camera recorder to support it. When adjusting the focus manually, make sure the unit does not move.
- Do not cover the white balance sensor and infrared beam detector and emitter.

Use a tripod or monopod if possible

If you have a tripod for your still camera, it can also be used with the video camera recorder. Use a sturdy one.

If a tripod is not available, try placing the camera on a tabletop, wall, or any other flat surface of suitable height.

W



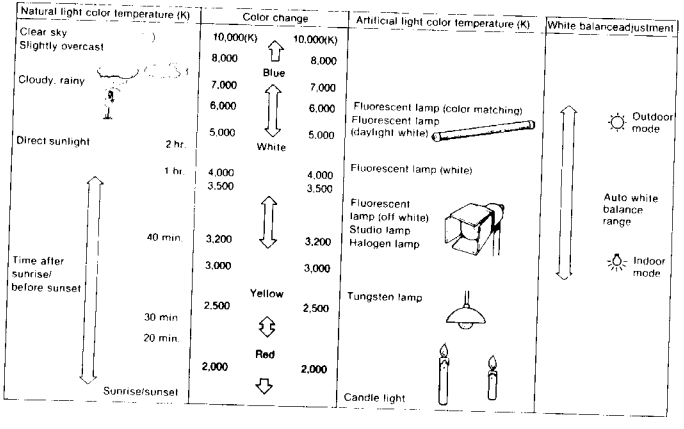
Keeping the horizontal plane level

Even if camera work is smooth and stable, shots can be tilted or off axis horizontally.

The horizontal plane can be easily determined by using the viewfinder frame as a reference. W

Color temperature—how it effects white balance adjustment

If the temperature of an object continues to increase, it will eventually begin giving off light. At this time, there is a fixed relationship between the object's temperature and its "light color." The temperature of the object radiating the light is expressed in absolute temperature (K). This is also known as the color temperature, which in turn stands for "light color." As color temperature increases, the light color changes from red to yellow to white to blue.



Precautions for using lights

Do not point the light at the recorder body. Instead, make sure that it is pointed parallel to the camera or away from it. Be especially careful with lights attached to the accessory shoe. The high heat from the lights pointed at the camera body can warp the cabinet.

For detailed instructions on proper use of lights, carefully read the instruction manuals that accompany them.

Understanding Light and Color

Brightness levels

The single greatest influence on picture quality is the brightness level. Using the following chart as a reference, take a few minutes to familiarize yourself with brightness levels to improve your recording.

	Unit: lux	ND filter required
Snow-covered mountains Snow fields Sandy beach, clear day in summer	100,000	
Clear day, mid-day (100,000) Clear day, mid-afternoon (35,000) Overcast day, mid-day (32,000)	10,000	
Overcast day, one hour after sunrise (2,000) Office lit by fluorescent lamps, near window (1,000) Clear day, one hour before sunset (1,000)	1,000	Normal recording
Department store counter (500 - 700) Station wicket (650) Office lit by fluorescent lamps (400 - 500)	500	
Room lit by two 30 W fluorescent lamps (300) Subway station platform (300)	300	
Arcade at night (150 - 200)	100	Video light recommended
Theater lobby (15 - 35) Candle light (10 - 15)	10	Video light required

rechargeable

Il existe deux types de batteries rechargeables, à savoir, les non rechargeables (batteries primaires), comme les piles au manganèse, les piles alcalines et les piles au lithium et les rechargeables (batteries secondaires), comme les piles au nickel-cadmium et les piles au plomb.
La batterie NP-55/77 utilisée avec cet appareil est de type rechargeable. Lorsqu'une batterie rechargeable est utilisée dans des conditions adéquates, la capacité de puissance restera stable pendant longtemps.

Durée de vie de la batterie

Pour chaque heure de prise de vues, prévoir 2 à 3 batteries rechargeables.

La NP-55 offre environ 40 minutes de fonctionnement.
La NP-77 offre environ 80 minutes de fonctionnement.

La durée de vie de la batterie ci-dessus n'est valable que dans le cas d'une batterie complètement rechargée, utilisée pour un enregistrement ininterrompu, à température ambiante normale.
Les cas suitants risquent d'écourter la durée de vie de la batterie
- Mode de pause à l'enregistrement (mode d'attente)
- Fonctionnement de la mise au point automatique
- Fonctionnement du changement de la longueur focale motorisé
- Insertion et retrait de la cassette

Température ambiante

Si la batterie rechargeable est utilisée dans un environnement froid, sa durée de vie est raccourcie
- Lorsque de l'énergie électrique est produite, une réaction chimique se produit dans la batterie. Lorsque la température ambiante est élevée, la réaction chimique est plus forte et la durée de vie de batterie est prolongée.
- Les piles au manganèse et les piles alcalines sont plus affectees par la température ambiante que les piles au nickel-cadmium. Par conséquent, ne pas utiliser l'étui à piles EBP-55 dans un endroit froid.

Existen pilas (no recargables) como las de manganeso, alcalinas, o de litio, y baterías (recargables) como las de níquel-cadmio o las de plomo.
En esta unidad se emplea una batería NP-55/77.
Si emplea la batería en las condiciones apropiadas, su capacidad de energía permanecerá estable durante mucho tiempo.

Duracion de la bateria

Por cada hora de cinta que desee filmar, planee emplear de 2 a 3 horas de carga de batería.

La NP-55 permitirá unos 40 minutos de operación.
La NP-77 proporcionará aproximadamente 80 minutos de operación.

Esta duración se obtendrá cuando la batería completamente cargada se emplee para videofilmación continua a temperatura normal.
En los casos siguientes, la batería se descargará
- En el modo de grabación en pausa (espera)
- Cuando el enfoque automático esté en funcionamiento
- Cuando el zoom motorizado esté en funcionamiento
- Cuando inserte o extraiga el videocasete

Temperatura ambiental

Si emplea la batería en climas fríos, su tiempo de operación se acortará.
- Cuando se genera energía eléctrica, dentro de la batería se produce un cambio químico. Cuando la temperatura ambiental es alta, el cambio químico es más intenso y la duración de la pila se prolonga más.
- Las pilas de manganeso y alcalinas se ven más afectadas por la temperatura ambiental que las baterías de níquel-cadmio.
  Por lo tanto la caja de pilas EBP-55 no podrá emplearse en climas fríos.

Para conseguir una producción más efectiva

Duración de la escena
— no demasiado larga ni corta

Aunque no existe una norma estricta, en general se recomienda que la escena sea de 6 a 7 segundos de duración a fin de facilitar su contemplación.
Una sucesión de escenas cortas puede cansar al espectador, mientras que las escenas largas pueden llegar a aburrirlo.

Corte de acuerdo con la narración

Corte la escena cuando finalice la narración.

Corte de acuerdo con el motivo X

- Haga las tomas de gran distancia más largas **[a]**...y los primeros planos más cortos, **[b]**.
  Como las tomas de gran distancia tienen más que ver que los primeros planos, muéstrelas durante más tiempo para que el espectador pueda comprender de lo que se trata.
- Haga las tomas interesantes y aquellas en las que el motivo esté constantemente moviéndose más largas. **[c]**
- Haga las tomas estáticas más cortas. **[d]**

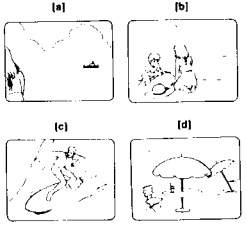
Filme como si estuviese contemplando la reproducción. Es decir, puede resultar muy útil imaginarse el comentario de la escena aunque la esté filmando usted.

En video, la clave es la organización

Para conseguir producciones de primera clase, es muy importante decidir con antelación el contenido y la secuencia de la filmación. Por lo tanto, el primer paso será trazar un programa sencillo basado en las seis interrogantes del periodismo (¿quién?, ¿qué?, ¿dónde?, ¿cuándo?, ¿por qué?, y ¿cómo?). Esto le permitirá filmar eficazmente los acontecimientos que se produzcan a su alrededor, tales como confrontaciones deportivas, graduaciones escolares, fiestas de cumpleaños, excursiones campestres, y otros acontecimientos especiales.

Cuando edite la cinta después de la filmación
Haga las tomas un poco largas para facilitar la edición.

X



For More Effective Production

Scene length
— not too long, not too short

While there's no hard-and-fast rule, it is generally advisable to make each scene 6–7 seconds in length for easier viewing.
A succession of short scenes can tire the viewer, while long, single scenes can become boring.

Cutting according to the narration

Cut the scene when the narration is finished.

Cutting according to the subject X

- Make long shots longer **[a]**...and close-ups shorter **[b]**.
  Because long shots have more to see in them than close-ups, show them longer so the viewer may understand what's there.
- Make interesting shots and shots in which the subject is constantly moving longer. **[c]**
- Make static shots shorter **[d]**

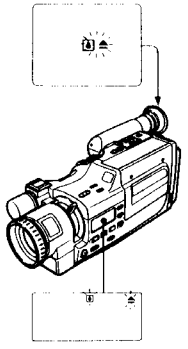
Shoot as if you were watching the playback. That is, it's helpful to occasionally imagine your commentary of the scene even as you're shooting it!

In video, organization is the key

To make a first-class production, it is important to decide the contents and shooting sequence in advance. The first step is to sketch out a simple outline of the actual production based on the time-tested "five W's of journalism" (who, what, where, when, why, how). This will allow you to efficiently and effectively record the many exciting events that happen around you, such as sports matches, graduations, birthday parties, picnics, camping trips, and other special events.

When the tape is edited after recording
Shoot the scene a little longer to make the editing easier.

[Y-1]



If the unit is brought directly from a cold to a warm location, moisture may condense inside the unit, on the surface or the tape or on the lens. In this condition, the tape may adhere to the head drum and be damaged or the unit may not operate correctly. To prevent possible damage under these circumstances, the unit is furnished with moisture sensors.

Moisture is present inside the unit when: [Y-1]

The ⏏ and ≜ indication blinks inside the viewfinder or in the display window.
No function except for cassette ejection will work.

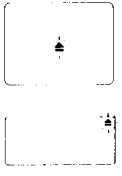
↓

Eject the cassette if present, and turn off the unit and leave it with the cassette holder open at least for one hour.

↓

The unit can be used again if the ⏏ and ≜ indication does not appear when the power is turned on again.

[Y-2]



If moisture is present on the surface of the tape [Y-2]

When the tape is inserted and a tape transport button is pressed, the ≜ indication blinks inside the viewfinder or in the display window. No function except for cassette ejection will work.

↓

Eject the cassette and let the unit and the cassette sit at least for one hour.
The cassette can be used again if the ≜ indication does not appear when the cassette is inserted and a tape transport button is pressed.

If moisture condensation occurs on the lens
There are no caution indications, but the lens becomes dim. Turn off the power and leave the unit unused at least for one hour.

Storage

- When the video camera recorder is not in use, discharge the battery pack completely, remove and store it in a cold place. When the battery pack is installed, even if the power is turned off, a very small amount of electric current flows.
- Even when the battery pack is not in use, it discharges. This is called self-discharge. Self-discharge of the nickel-cadmium battery is more than that of the manganese or alkaline battery.
  The capacity decreases about 20 % in one month and 30 % in two months.
  After the battery is stored in a hot place, the capacity is lowered due to self-discharge.

Battery life

The battery pack can be used about 500 times in normal temperature, if it is charged fully and discharged and stored in a cold place when not in use.

The battery pack can be used until the capacity becomes less than 50 % and cannot be recharged.
Even when a fully charged battery is used, if the ⟨⟩ mark blinks, use a new battery pack.

Precautions

Operation

- Operate the unit on 6.0V (battery pack)/ 7.5V (AC power adaptor)/9.0V DC (alkaline batteries).
- For DC or AC operation, use the accessories recommended in this manual.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Do not hold the unit by the viewfinder.
- Avoid rough handling or mechanical shock to the unit. Be particularly careful of the lens.
- Do not apply excessive force to the microphone.
- Avoid shooting the same object for a long period of time (for example, using as a lookout camera or pointing the camera directly at the sun or other bright light sources) as this will damage the color filter inside the camera and may cause a poor picture quality.
- Remove and store video cassettes after recording or playback.
- Do not wrap up the unit and operate it because heat may build up internally.
- Avoid using and storing the recorder in the following locations.
  —Locations susceptible to vibration.
  —Locations exposed to strong magnetic fields.
  —Locations near TV or radio transmitters where strong radio waves are generated.
- Do not put the unit on the sand.

Care

- Store cassettes in their cases and keep them in an upright position to prevent intrusion of dust and uneven winding.
- When the unit will not be used for a long period of time, periodically turn on the power, operate the camera section and recorder section and play back a tape for about three minutes.
- Clean the lens with a soft brush to remove dust. If there are fingerprints on them, remove them with a soft cloth. Clean the recorder body with a dry, soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.
  For protection, keep the lens cap on the lens when not using the camera.

System

Video recording system	Rotary two heads, Helical scanning FM system
Audio recording system	Rotary head, FM system
Video signal	NTSC color, EIA standards
Usable cassette	8 mm video format cassette
Tape speed	SP: Approx. 1.43 cm/sec. LP: Approx. 0.72 cm/sec. (playback only)
Recording time	SP mode: 2 hours (P6-120)
Playback time	SP mode: 2 hours LP mode: 4 hours (P6-120)
Fast forward time	Approx. 6 min. 30 sec. (P6-120)
Image device	CCD (Charge Coupled Device)
Viewfinder	Electronic viewfinder (black and white)
Lens	Combined 8 × power zoom lens f = 8.5–68 mm, F1.4 with macro Filter diameter: 46 mm
Auto focus system	Infrared autofocus
Color temperature	Auto: From the light at a tungsten lamp to the light on a slightly overcast day. Preset value: ☀ (5800 K) ☼ (3200 K)
Minimum illumination	4 lux
Illumination range	4 lux-100,000 lux (0.4-9,294 footcandles)
Recommended illumination	More than 300 lux (28 footcandles)
Aperture correction	Automatic

Input and output connector

Video output	Phono jack, 1 Vp-p, 75 ohms unbalanced sync negative
Audio output	Phono jack, -7.5 dBs, at output impedance less than 2.2 kilohms
RFU DC OUT	Special minijack, 5V DC
Video input	Phono jack, 1 Vp-p, 75 ohms unbalaced, sync negative
Audio input	Phono jack, -7.5 dBs, input impedance more than 47 kilohms
Earphone jack	Minijack, 8-ohm impedance
Remote jack	Stereo mini-minijack
MIC jack	Minijack, -66 dBs, low impedance With 2.5-3 V DC output, impedance 6.8 kilohms
Microphone power output jack	Special minijack, 5 V DC

Display in the viewfinder

Mode and caution indicators
Mode: REC/STBY, ■ (Manual focus ZERO MEM. ☀/☼ LP, FADER, 🖼
Caution: ⚠, 🔋, 📼, ⊗, ⏏
Time/date indication
Shutter speed indication
Tape counter
Recording/battery lamp

General

Power requirements	Battery compartment 6 V (battery pack)/7.5 V (AC power adaptor)/9.0 V (alkaline batteries)
Power consumption	6.5 W (camera recording) including the viewfinder
Installation	Vertically
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	-20°C to +60°C (-4°F to +140°F)
Dimensions	Approx. 114 × 131 × 315 mm (w/h/d) (4 1/2 × 5 1/4 × 12 1/2 in.) in.)
Weight	Approx. 1.2 kg (2 lb 10 oz) excluding the battery and cassette
Microphone	Electret condenser microphone, omini-directional monaural type

Design and specifications are subject to change without notice.

Each country has special TV color broadcast and electricity systems. Before using your recorder abroad, check the following points.

Differences in color systems
If you prepare fully charged battery packs and the AC power adaptor which can be used in all areas with the local power supply of 100V-240V, you can use your recorder in any country. You can monitor the playback picture on the viewfinder screen. However, to monitor the playback picture on a TV, the TV must be based on the NTSC system and have the video/audio inputs.

NTSC system countries
Bahama Islands, Canada, Central America, Japan, Korea, Mexico, Taiwan, the Philippines, U.S.A., etc.

PAL system countries
Australia, Austria, Belgium, China, Denmark, Finland, Great Britain, Holland, Hong Kong, Italy, Kuwait, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Thailand, West Germany, etc.

SECAM system countries
Bulgaria, France, Hungary, Iran, Iraq, Monaco, Poland, the Soviet Union, etc.

Differences in cassette tapes
There are two kinds of cassette tapes, due to the video systems, "P6-" for the NTSC color system, and "P5-" for the PAL color system. They differ in tape speed (recording/playback time). When a "P5-" tape is used in countries of the NTSC system, the tape speed is as follows:

Cassette tape	Tape speed	
	SP	LP (playback only)
P5-15	22 min.	44 min.
P5-30	43 min.	86 min.
P5-60	84 min.	168 min.
P5-90	126 min.	252 min.

If you think you have a problem, double-check before calling the serviceman.
You may have overlooked something relatively simple!

Symptom	Cause (Trouble Indicator)	Procedure
The power will not turn on.	The battery is not attached.	Attach the battery.
	The battery is exhausted.	Use a new battery.
	The AC power adaptor is not connected to a wall outlet.	Connect the adaptor to a wall outlet.
The START/STOP button does not operate.	The tape is affixed to the drum.	Remove the cassette with the EJECT button.
	The tape is at its end.	Rewind the tape or use a new one.
	The POWER switch is set to VTR.	Set it to CAMERA.
	The tab on the cassette is out (red).	Use a new casssette or slide the tab.
The tape does not move when a tape transport button is pressed.	POWER switch is set to CAMERA or OFF.	Set it to VTR.
	The tape is at its end.	Rewind the tape or use a new one.
The power turns off.	While being operated in the CAMERA mode, the recorder has been in the pause mode for more than 5 minutes.	Slide down the STANDBY switch, and slide it up again.
	The battery is exhausted.	Use a charged battery.
A vertical band appears when a subject such as lights or a candle flame is shot against a dark background.	The contrast between the subject and background is too high; the camera is not malfunctioning.	—
The battery pack is quickly discharged.	The ambient temperature is too low.	—
	The battery pack has not been charged fully.	Charge the battery pack again.
The cassette cannot be removed from the compartment.	The battery is exhausted.	Use the charged battery or the AC power adaptor.
The auto focusing function does not work.	The focusing is set to manual.	Set to the auto focusing.
	Shooting conditions are not suitable for auto focusing operation.	Focus manually.
The color of the playback is not appropriate.	The white balance sensor is covered.	Clear the sensor.
	Shooting conditions are not suitable for auto white balance operation.	Adjust the white balance manually.
The image on the viewfinder screen is not clear.	The viewfinder lens is not adjusted.	Adjust the viewfinder lens.
The playback picture is not clear.	The EDIT switch is set to the "EDIT" position.	Set the EDIT switch to the upper position.
	The channel for the VCR is not adjusted on the TV.	Adjust the TV.

Symptom	Cause (Trouble Indicator)	Procedure
The playback picture is too bright.	The BACK LIGHT button was not released during recording.	—
The picture is noisy.	The video heads may be contaminated.	Clean the heads using the Sony V8-25CL video head cleaning cassette. For details on cleaning, refer to the instructions furnished with the cleaning cassette. If the V8-25CL cleaning cassette is not available in your area, have the heads cleaned at the nearest Sony service facility.
No function except for cassette ejection works.	Moisture condensation has occurred. (See page 122.)	Remove the cassette and leave the unit for at least an hour.
The counter or date/time indication in the display window blinks.	The lithium battery is not installed.	Install the lithium battery.
	The lithium battery is exhausted.	Use a new battery.

To make sure you don't miss those "once in a lifetime" scenes, go over the following check list and make the necessary preparations.

Required for recording

CCD-F50

Battery pack NP-55 or NP-77
: Is it charged?
: Are there enough battery packs to cover the planned recording time?

Cassette tapes
: Have you prepared enough tapes to cover the planned recording time?

Convenient accessories

Carrying case

Tripod
: Required for scenes in which stability of the camera is important. Tripod mount screw must match the receptacle mount.

AC power adaptor
: Used to operate the video camera recorder on house current and to charge battery packs

Battery case EBP-55

○when the indication appears [ ] lighting [ ] slow blinking [ ] fast blinking

Cause	Position of the POWER switch: VTR	Position of the POWER switch: CAMERA	Indication: Indication to be shown inside the viewfinder	Indication: Camera recording/ battery lamp	Indication: Indication to be shown in the display window
The battery is fully exhausted.	○	○			
The battery is weak.	○	○			
The tape is at its end.		○			
No cassette is inserted.		○			
The tab on the cassette is out.		○			
Moisture has condensed inside the unit.	○	○			
The gap of the head is clogged.	○	○			
Other troubles	○	○			
The lithium battery is weak.	○ (The indication inside the viewfinder does not appear.)	○	The counter or date/time (5 seconds)		The counter or date/time